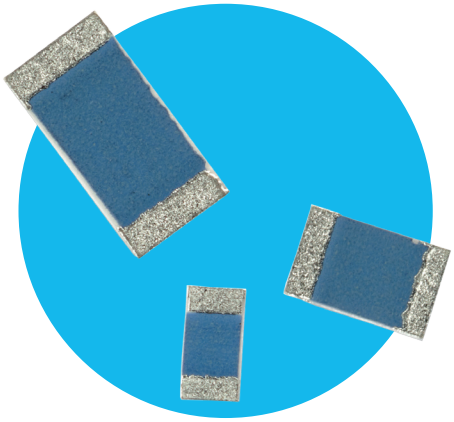
Resistors

Water Insoluble Nitride Thin Film Precision Chip Resistors

WIN Series



- TaN thin film technology
- Inherent moisture protection superior to that of passivated nichrome chip resistors
- High stability in humid and polluted environments
- Typical 85°C, 85%RH biased humidity 2000 hour stability <0.1%
- Typical moisture resistance stability ±100ppm
- Precision ±0.05% tolerance and ±15ppm/°C
- Anti-sulfur terminations
- 100% screened by automated optical inspection

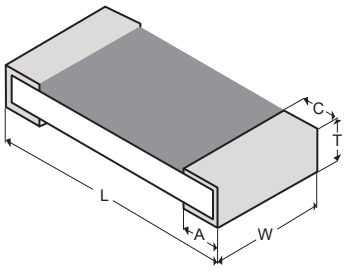
All Pb-free parts comply with EU Directive 2011/65/EU amended by (EU) 2015/863 (RoHS3)

Electrical Data

		T0603	T0805	T1206
Power rating @ 70°C	watts	0.1	0.25	0.33
Resistance range	ohms	5R to 100K	5R to 267K	5R to 1M0
Limiting element voltage (maximum voltage)	Vdc or rms	75	100	200
Resistance tolerance	%	±0.05 ±0.1 ±0.5 ±1		
TCR	ppm/°C	±15 ±25 ±50		
Standard values		E24, E96, E192		
Ambient temperature range	°C	-65 to +150		

Physical Data

Dimensions in mm & (inch) and weight in mg						
	L	W	T	C	A	Wt. nom
T0603	1.58 ± 0.15 (0.062 ± 0.006)	0.80 ± 0.10 (0.031 ± 0.004)	0.45 ± 0.10 (0.018 ± 0.004)	0.27 ± 0.20 (0.011 ± 0.008)	0.34 ± 0.20 (0.013 ± 0.008)	2.0
T0805	2.02 ± 0.15 (0.080 ± 0.006)	1.28 ± 0.15 (0.050 ± 0.006)	0.45 ± 0.10 (0.018 ± 0.004)	0.31 ± 0.20 (0.012 ± 0.008)	0.40 ± 0.20 (0.016 ± 0.008)	4.3
T1206	3.15 ± 0.15 (0.124 ± 0.006)	1.57 ± 0.15 (0.062 ± 0.006)	0.50 ± 0.15 (0.020 ± 0.006)	0.45 ± 0.25 (0.018 ± 0.010)	0.52 ± 0.25 (0.020 ± 0.010)	9.6



Construction

Conductors, thin film resistive element and epoxy outer protection are applied to an alumina substrate. The chips are supplied with wrap-around terminations suitable for soldering. The terminations have an electroplated nickel barrier and either 100% matt tin or 60/40 SnPb finish.

Marking & Solvent Resistance

WIN resistors have no marking on the component body. The body protection is resistant to all normal cleaning solvents suitable for printed circuits

General Note
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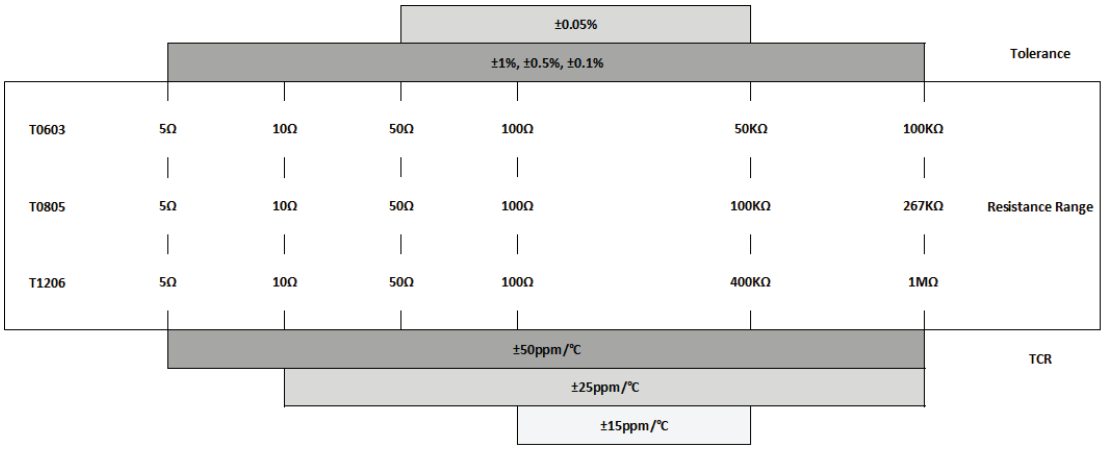
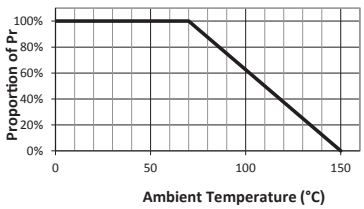
Manufacturing Capabilities Data



Performance Data

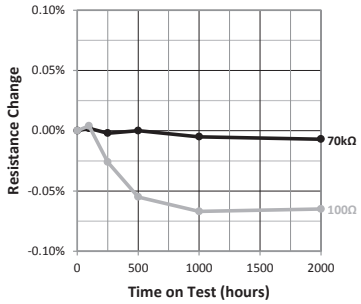
Test	Method	ΔR	
		MIL-PRF-55342 Limits (max)	WIN actual performance (typ)
Thermal Shock	MIL-PRF-55342 4.8.3 (MIL-STD-202 107G cond. F: 5 cycles in air, +150 / -65°C)	± 0.1%	± 0.01%
Thermal Shock - Extended	MIL-STD-202 107G cond. F-3: 100 cycles in air, +150 / -65°C	± 0.1%	± 0.02%
Low Temp. Operation	MIL-PRF-55342 4.8.5 (-65°C)	± 0.1%	± 0.02%
Short Time Overload	MIL-PRF-55342 4.8.6 (lesser of 6.25 x Pr or 2 x LEV for 5 seconds)	± 0.1%	± 0.02%
High Temp. Exposure	MIL-PRF-55342 4.8.7 (+150°C for 100 hours)	± 0.1%	± 0.02%
High Temp. Exposure Extended	+150°C for 1000 hours	N/A	±0.1%
Resistance to Solder Heat	MIL-PRF-55342 4.8.8	± 0.2%	± 0.02%
Moisture Resistance	MIL-PRF-55342 4.8.9 (MIL-STD-202 106G: 10 cycles, 65±2°C, 95±5% RH)	± 0.2%	± 0.01%
Load Life	MIL-PRF-55342 4.8.11 (MIL-STD-202 108A: Pr at 70°C for 2000 hours)	± 0.5%	± 0.08%
Biased Damp Heat	85°C, 85%RH, 10% Pr bias, for 2000 hours	N/A	± 0.08%
Flower of Sulfur	ASTM B-809 (modified) 105°C Dry, 1000 Hours	Pass	

Temperature Derating



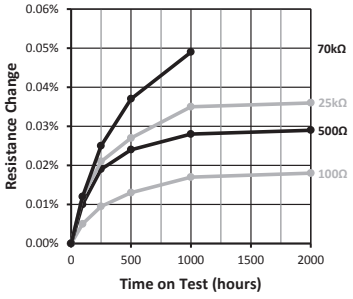
Load Life Stability

Typical Load Life per MIL-STD-202 108A



Biased Damp Heat Stability

Typical @ 85°C, 85%RH, 10% P, bias



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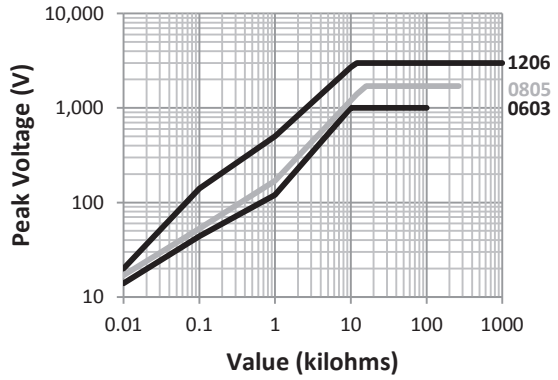
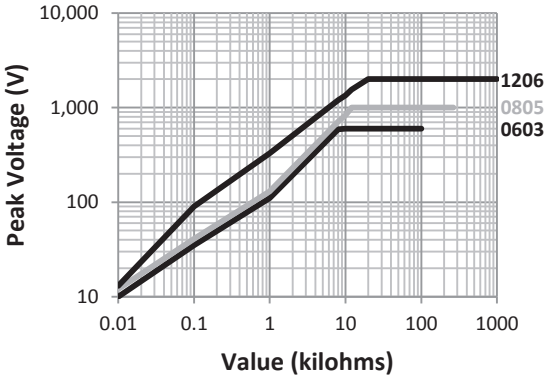
1.2/50µs Pulse Performance

IEC60 115-1, 5 pulses, |ΔR|<0.1%



10/700µs Pulse Performance

IEC60 115-1, 10 pulses, |ΔR|<0.1%



Ordering Procedure

This product has two valid part numbers:

European (Welwyn) Part Number: WINT1206LF031001B3 (1206, ±25ppm/°C, 1 kilohm ±0.1%, Pb-free)

W	I	N	T	1	2	0	6	L	F	0	3	1	0	0	1	B	3
1				2				3		4			5			6	7

1 Series	2 Type	3 Termination	4 TCR	5 Value	6 Tolerance	7 Packing		
WIN	T0603	PB = SnPb	11 = ±15ppm/°C	3 digits + multiplier	A = ±0.05%	Tape & reel		
	T0805	LF = Pb free	03 = ±25ppm/°C	R = ohms for values <100 ohms	B = ±0.1%	3	3000/reel	Standard
	T1206		02 = ±50ppm/°C		D = ±0.5%	Blank	1000/reel	
					F = 1%			

USA (IRC) Part Number: WIN -T1206LF-03-1001-B3 (1206, ±25ppm/°C, 1 kilohm ±0.1%, Pb-free)

W	I	N	-	T	1	2	0	6	L	F	-	0	3	-	1	0	0	1	-	B	3
1				2					3			4			5					6	7

1 Series	2 Type	3 Termination	4 TCR	5 Value	6 Tolerance	7 Packing		
WIN	T0603	PB = SnPb	11 = ±15ppm/°C	3 digits + multiplier	A = ±0.05%	Tape & reel		
	T0805	LF = Pb free	03 = ±25ppm/°C	R = ohms for values <100 ohms	B = ±0.1%	3	3000/reel	Standard
	T1206		02 = ±50ppm/°C		D = ±0.5%	Blank	1000/reel	
					F = 1%			

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Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

TT Electronics:

WIN-T0805LF-03-1501-B WIN-T1206LF-03-2001-B WIN-T0603LF-03-2002-B WIN-T0805LF-03-6812-B WIN-T1206LF-03-3162-B WIN-T0603LF-03-3012-B WIN-T0603LF-03-2490-B WIN-T0805LF-03-7502-B WIN-T0603LF-03-1002-B WIN-T1206LF-03-20R0-B WIN-T0603LF-03-3161-B WIN-T0805LF-03-4750-B WIN-T0805LF-03-3321-B WIN-T0603LF-03-2000-B WIN-T0805LF-03-75R0-B WIN-T1206LF-03-6812-B WIN-T0603LF-03-1502-B WIN-T0603LF-03-75R0-B WIN-T1206LF-03-2002-B WIN-T0603LF-03-30R1-B WIN-T0805LF-03-1001-B WIN-T0805LF-03-30R1-B WIN-T0805LF-03-9091-B WIN-T0805LF-03-1502-B WIN-T0603LF-03-3321-B WIN-T0603LF-03-1001-B WIN-T0603LF-03-3011-B WIN-T0603LF-03-4992-B WIN-T1206LF-03-90R9-B WIN-T0805LF-03-3011-B WIN-T0805LF-03-1000-B WIN-T1206LF-03-3012-B WIN-T0603LF-03-7502-B WIN-T1206LF-03-2492-B WIN-T0805LF-03-1002-B WIN-T0805LF-03-49R9-B WIN-T0805LF-03-2490-B WIN-T0805LF-03-3161-B WIN-T0805LF-03-3012-B WIN-T0603LF-03-4750-B WIN-T0805LF-03-3010-B WIN-T1206LF-03-15R0-B WIN-T0805LF-03-1500-B WIN-T0603LF-03-3010-B WIN-T0603LF-03-2491-B WIN-T0603LF-03-2492-B WIN-T0805LF-03-9092-B WIN-T0805LF-03-2000-B WIN-T0805LF-03-4751-B WIN-T0805LF-03-4991-B WIN-T1206LF-03-4993-B WIN-T0603LF-03-1500-B WIN-T0805LF-03-2492-B WIN-T1206LF-03-1502-B WIN-T0603LF-03-4991-B WIN-T1206LF-03-10R0-B WIN-T1206LF-03-5111-B WIN-T0603LF-03-1000-B WIN-T1206LF-03-2000-B WIN-T1206LF-03-4022-B WIN-T0603LF-03-6812-B WIN-T0805LF-03-24R9-B WIN-T0805LF-03-4021-B WIN-T0805LF-03-1103-B WIN-T0805LF-03-20R0-B WIN-T0603LF-03-7501-B WIN-T1206LF-03-2491-B WIN-T1206LF-03-9092-B WIN-T1206LF-03-1003-B WIN-T0603LF-03-24R9-B WIN-T1206LF-03-4751-B WIN-T1206LF-03-7503-B WIN-T0603LF-03-20R0-B WIN-T0805LF-03-7501-B WIN-T1206LF-03-1500-B WIN-T0805LF-03-2003-B WIN-T1206LF-03-1004-B WIN-T1206LF-03-4991-B WIN-T0805LF-03-4992-B WIN-T1206LF-03-1000-B WIN-T0603LF-03-49R9-B WIN-T1206LF-03-3010-B WIN-T0603LF-03-9091-B WIN-T0805LF-03-1213-B WIN-T1206LF-03-7500-B WIN-T1206LF-03-30R1-B WIN-T1206LF-03-1103-B WIN-T1206LF-03-9091-B WIN-T1206LF-03-75R0-B WIN-T0805LF-03-5621-B WIN-T1206LF-03-3321-B WIN-T0805LF-03-90R9-B WIN-T0603LF-03-5621-B WIN-T1206LF-03-5621-B WIN-T1206LF-03-49R9-B WIN-T1206LF-03-1002-B WIN-T0603LF-03-7500-B WIN-T1206LF-03-2490-B WIN-T1206LF-03-7502-B WIN-T1206LF-03-4750-B